

Quiz - all good?

Newton's Laws

First: Law of Inertia

Objects remain in constant speed and direction motion unless unbalanced forces are applied.

$$F_{\text{net}} = \sum F \quad 0 \quad v \text{ is constant, } a = 0$$

Second Law: Law of acceleration

$$F_{\text{net}} = ma = \Delta p / \Delta t$$

objects accelerate proportionally to the net applied force and inversely to their mass.

Third Law: Action-reaction law

For every force object A acts on object B, object B reacts with an equal but opposite force.

When you walk, you push on the ground and the ground pushes back on you with a surface force - vector sum of the friction force and the reaction (Normal force).

p92 Problems: 3, 13, 15, 27, 29, 31 hand in free body diagrams

$$R = V^2 \sin(2\theta) / g$$

$$v = \text{Sqrt}(10 \times 9.81 / \sin(2 \times 35)) = 10.21742822239956$$